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OBSERVATIONS ON TUBERCLE.

Read before the Boston Society for Medical Improvement, January 10th, 1870, by Dr. J. B. S. JACKSON.

THE subject of tubercle has several times been alluded to before the Society, of late, and I propose to give some of the impressions that I have received in regard to the disease from the dissections that I have made in former years; with some reference to the opinions of others, but avoiding many questions that have been much discussed, and probably always will be by those who have a taste for such investigations.

Tubercle, as it has been generally understood since the time of Laennec, and until the last few years, appears in the lungs under different forms. First, there is the opaque form. Secondly, there is what may be called the gray granulation. Thirdly, there is an infiltration of the lung, apparently, by a gray deposit. And, lastly, there is the miliary tubercle.

With the first we are but too familiar; scarcely a case of phthisis being examined without more or less of the deposit being seen. The gray granulation, which comes next in frequency, is about the size of a turnip seed, has a degree of translucency that suggests the idea of the flesh of some kind of uncooked fish, a semi-cartilaginous hardness, and is often said to feel like shot between the thumb and finger, inasmuch as the pulmonary tissue immediately about it is generally perfectly healthy and of course yielding. Its surface is smooth and shining, so that it contrasts with the comparatively rough as well as dead look of the opaque deposit. These two first forms of tubercle are almost invariably seen together in the adult, though I have occasionally met with the opaque form alone in children. The gray granulation is essentially a chronic disease; and a similar, though much smaller and more transparent deposit is occasionally seen upon the pleura and peritoneum, but very seldom if ever in any other organ than the lungs. This form of deposit is not referred to, so far as I see, by Niemeyer.

The third variety seems to be common enough in Europe, and yet I have scarcely ever met with it. A considerable portion of one of the lobes is condensed, of a grayish color, smooth and somewhat shining upon the cut surface; looking, in fact, not unlike the granulation in structure, though very different in form. A soft variety of grayish infiltration seems not to be rare in Europe, and is compared by Niemeyer to frog's spawn, but I have never seen a case of it.

The miliary tubercle is of frequent occurrence, as compared with the gray infiltration, but quite rare as compared with the granulation. I do not remember ever to have seen it in a common case of phthisis, or as a chronic disease, though there may be associated with it the remains of a former tubercular deposit in the lungs or bronchial glands. It is always an acute affection, so far as I have seen it; and, if the deposit that is often seen beneath the peritoneum and corresponding to an intestinal ulcer is to be excepted, I do not see how the two are to be identified as the same formation. It is decidedly smaller than the granulation, less dense, and less translucent; but its chief characteristic is that the lungs are perfectly crowded with the deposits from apex to base, though they are most abundant and opaque at the apex. They are nowhere, perhaps, a fourth of an inch apart, and yet they are perfectly distinct; whereas the gray granulations not unfrequently coalesce. As the pulmonary tissue, also, about these last is healthy, excepting, of course, the opaque tubercular deposit, it is more or less congested in the case of the miliary, and has often a somewhat fleshy feel, that strongly suggests the idea of inflammation; and yet there is no pleurisy. It runs a course of two weeks or more, and without any very marked local symptoms, excepting a rapidity of respiration, and perhaps some lividity; but often with such constitutional symptoms as lead to the suspicion of typhoid fever. It is also very

frequently met with in cases of tubercular meningitis—a disease that, it is well known, occasionally simulates fever; and, as the attack sometimes comes on when the subject is apparently in perfect health, I have supposed that the pulmonary disease dated no further back than the meningeal. The deposit in the membranes, though considerably smaller, resembles sufficiently that in the lungs to make it probable that the two are essentially similar; and I suppose that in the membranes it precedes the meningitis, as I have, once at least, found it where there was no inflammation. If such is the case, the amount of inflammation that is excited in the membranes is very remarkable as compared with what we see in and about the lungs. Niemeyer, who gives an excellent account of this form of tubercle in his work on Practical Medicine, says that in most cases of the acute disease the peritoneum, liver, spleen, and kidneys, "are covered by miliary tubercles;" but, excepting a few scattering, whitish opaque, indefinite and very minute deposits occasionally in the liver and kidneys, I have found the disease confined to the lungs, unless the membranes of the brain were affected.

A vast many pathological questions, however interesting scientifically, are of no practical value; but it is not so with the question as to the nature of tubercle. The alliance of this product to some form of inflammation has often been suggested and sometimes urged; and within the last few years Niemeyer has particularly distinguished himself by maintaining the idea that there is but one form of true tubercle —the miliary; and that all the others that have been described are only different forms of pneumonia. "In very many cases," he says, "there is not a single tubercle in phthisical lungs." The common, opaque, tubercular deposit, resembles very strikingly what we see in the case of gray hepatization; and I cannot look back to the time when I did not consider them allied; it being sometimes, if not often, impossible to distinguish them if a small isolated portion only is taken; and, as a good illustration, I would mention a case that occurred at Guy's Hospital in the winter of 1830–1. A case of well-marked acute pneumonia was being examined when Dr. Bright came into the room, saw the gray hepatization, and, knowing nothing whatever of the case, spoke of it as a tubercular disease; and he would not allow his mistake until the different parts of the lung were put together, and he saw the inflammation in all its stages. There is also, as in pneumonia, a tendency to bronchitis; and, if not to pleurisy, to something at least that tends to the formation of pleural adhesions—not merely when abscesses may be threatening to burst into the cavity, but in an early stage of the disease. And there is one organ—the larynx—in which ulceration, apparently of the most simple form, and very generally, so far as I can remember, without a trace of tubercular deposit, is seen in connection with tubercular disease of the lungs. There must be something peculiar, however, in this ulceration of the larynx, as it is never seen in common acute pneumonia. Simple ulceration of the large intestine is also very common. But, if the tubercular deposit is allied to pneumonia, there are some very marked points of difference: one affects the upper and the other the lower part of the lung; one tends to the formation of cavities, and the other scarcely ever suppurates; one affects various organs in the body, and the other is confined to the lungs; one tends to death, and the other to recovery. In both cases the deposit, according to Niemeyer, forms upon the free mucous surface of the terminal branches of the air tubes; but this is nothing more than what was insisted upon and figured by Dr. Carswell. It appears, he says, as if thrown in with a syringe. His views, however, though very extensively known to his own countrymen, were never accepted by the profession; and, having slumbered for many years, are now revived in Germany.

The third form of tubercular deposit that I have described has been for a long time generally regarded as a form of chronic pneumonia; and, in the very few cases that I have seen, it certainly has looked as much as anything like the result of chronic inflammation, modified by an unhealthy state of the system. I have never, however, seen this structural change in the lung when the case began as one of common acute pneumonia, and never a case in which there could be a question as to which form of disease existed; whereas, I have several times seen cases that were intermediate between acute pneumonia and the opaque form of tubercular disease, so that it was impossible to assign them a place under either head—the symptoms being taken into account as well as the morbid appearances. The term inflammation has always been used very loosely, and never more so than by some of our modern pathologists.

As to the gray granulation, I have never seen any of the usual appearances of inflammation in or about it. The size and scat-

tered form of the deposit, also, would favor the old idea of its being a peculiar product; but this is no more, in a case of chronic disease, than what we see in variola, as an acute affection, and as distinguished from an erythema. The gray infiltration looks no more like a process of inflammation; and it seems to be rather a stretch in the use of the term, to say that either of these pulmonary affections is inflammatory; but if one is, I believe that they both are.

The miliary tubercle looks more like the result of inflammation, as it is an acute affection, and the intervening pulmonary tissue, as above stated, so often shows appearances of inflammation. This last may be a secondary affection, but it shows the tendency of the disease. As to the locality of the structural change in this and the two previous forms of disease, I have supposed from the general appearance of the deposit that the parenchyma of the lung was affected. A minute, white, soft deposit is sometimes seen in patches in the mucous membrane of the primary bronchi and lower part of the trachea; but, supposing it to be of a tubercular nature, it does not particularly resemble the miliary tubercle, and I should question any inference from this fact that miliary tubercles, when scattered through the lungs, originate from the mucous membrane. The deposit, though so marked in the largest bronchi, I have never seen in the smaller ones, except near the opening into a cavity.

Niemeyer describes a form of catarrhal pneumonia as occurring in some acute infantile diseases, and tending to degeneration. A few scattered lobules, here and there, have very much the red, defined, carnified look and feel that we see in the imperfectly inflated lung of a new-born fœtus. This appearance I have seen quite a number of times, but never the changes in it that he describes.

One of the peculiarities of the tubercular form of inflammation, as it may be called, is, as I have already said, its tendency to affect other organs than the lungs, but varying much in this respect, in different subjects, and also according to the age. In the lower half, more or less, of the small intestine, the opaque deposit is seen, commencing apparently in the mucous membrane, and going on to form an open ulcer that extends by a repetition of the process that originated it. Peyer's patches, also, are still more subject to this deposit, and consequent ulceration. But in the large intestine, on the contrary, the ulcers very often show none of the opaque deposit, and so far resemble those of the larynx as above stated. Niemeyer regards these ulcers, and especially those seen in Peyer's patches, as generally of a "scrofulous" character, and to which the patches, by virtue of their character as an aggregation of elementary lymphatic glands or ganglia, might very well be disposed. He speaks of the intestinal affection as a complication of the pneumonia (tubercular disease), but he does not undertake to trace a connection between the two, if he believes in it; and unless the pulmonary affection was something very different from a common pneumonia, I don't see how it could be traced. Drawing an analogy between the intestinal (Peyer's) and the cervical glands, he says that, as a scrofulous disease of these last is associated with disease of the neighboring mucous membranes and skin, so a similar affection of the intestinal glands is with "chronic catarrhs of the intestine," and by which he probably means some form of inflammation of the neighboring mucous membrane. I have, however, often been struck with the perfectly healthy appearance of the intervening mucous membrane in cases of extensive ulceration, though I would by no means say that this is always to be seen. Niemeyer says that these ulcers "have the evident stamp of a very ancient origin, are often partly cicatrized, and the mesenteric glands contain as a rule cretaceous matter." These three statements are utterly at variance with what I have observed here. The duration of the disease, whether in the intestines or in the lungs, varies in different subjects; and in the intestines it sometimes comes on early in the pulmonary affection; but I never had any reason to suppose that it preceded this last; and I certainly have never seen any indications of great age in the intestinal ulcers. Partial cicatrization, as he describes it in his Pract. Med., I never saw any approach to. Complete cure, he says, is rarely seen; and, I believe, he may well say so. As to the cretaceous matter in the mesenteric glands, I have not often found it under any circumstances; never, so far as I can remember, in a case of intestinal ulceration, but generally in a healthy adult who had died of some disease entirely foreign to the intestine.

Niemeyer remarks that tuberculosis of the spleen cannot be recognized during life. Several years ago I saw two children in whom the organ was enlarged by the disease. One only was examined after death (No. 581 in the Society's Cabinet), and the organ was so large as to be felt far below

the cartilages of the ribs. The other was a child with marasmus, but no marked local symptoms to explain it; the spleen being evidently enlarged, I examined the chest, and found the physical signs of phthisis. Within a year or two of this last case I saw a man with an obscure febrile affection; the spleen was distinctly felt, but there seemed to be good reasons that I cannot now recall for supposing that it was not a case of typhoid fever; and, though the spleen is by no means so liable to tubercular disease in the adult as it is in children, I was inclined to regard it as one of those cases of rapid tubercular development that simulates fever, and in which the spleen was involved in the disease. It certainly would be well to bear in mind this fact of enlargement of the organ in infantile marasmus, that requires a local explanation.

Patients with consumption have generally been considered as doomed, but of late years a more favorable view of the disease has been taken; and particularly is it so with Niemeyer. He does not consider phthisis "as an especially dangerous disease; the cavities show ordinarily a decided tendency to heal; the greatest danger for most phthisical patients is that they may become tuberculous" (Phthisis Pulmonalis, p. 19). Caseous masses, he also says upon the same page, may be completely absorbed. This is going very far; and yet I have been perfectly satisfied for very many years that the disease might not merely be arrested, but that the deposit might be entirely absorbed. The proofs are anatomical, and strengthened by observations upon the living body. The very great number of cases in which the remains of former tubercular disease are discovered is a striking fact; the subjects having perhaps been perfectly healthy for many years before death. Cicatrices of the substance and a puckering of the surface of the lungs, towards the apices, are not very rarely seen; and when they are of considerable size they show without any reasonable doubt that there had formerly been a cavity in the substance of the lung. And, when we see a few small, defined, hard, whitish and dryish granules, we cannot suppose that there had been just so many tubercular deposits that had been arrested and degenerated, and no more. We cannot prove the fact, but the probability is that there had been many more, and that the rest had been absorbed. Cavities occasionally show signs of arrest, and the history of the individual accords with the anatomical appearances. Dr. Dixwell, one of our most highly respected physicians, died in 1834 of acute pneumonia; and, on dissection, there were found irregular cavities at the apices of the lungs, about the size of an English walnut, with thickened, firm parietes, filled with a bluish, pasty substance, and showing every sign of arrest; also a few perfectly latent tubercles. Dr. D. had had two copious hæmorrhages—once twenty-two years, and once five or six years before death; and after each attack he was supposed to be in consumption. He did, however, a large professional business, and looked like a man in fine if not robust health, though he always had a loud, sonorough cough. A very similar case also, anatomically, though the progress towards a cure was not quite so advanced, was that of a merchant of this city who died of yellow fever.

There is an appearance that I have often and long ago observed, and that must be familiar to many; and yet I have never seen it noticed. The surface of the lung at the very apex, and I have seen it nowhere else, has a wilted appearance to the extent of an inch or two; the color is a somewhat opaque white, mottled with black; the irregularity of the surface is well expressed by the term "wilted," and to the feel it is stiff. On being cut through, there is found beneath the surface a very coarse, lax, rather dryish, defined, and almost or quite black areolar tissue, to about the depth of a line midway. Beneath this the lung may be perfectly healthy, though oftener there are a few small, whitish, dried tubercles. Very light pleural adhesions often exist more or less over the surface, but nearly or quite as often the surface is free. This appearance, I believe, indicates the former existence of a tubercular deposit.

Observation upon the living body, also, shows not merely an arrest of disease, but absorption of the deposit. There are cases in which, by the aid of physical signs, we can, as it were, look into the interior of the lungs, and be, beyond every possibility of a doubt, sure of a diagnosis. The existence of tubercular disease may be considered as proved; and equally proved is its disappearance. A most striking illustration of this fact occurred many years ago in the case of a girl, who entered the hospital under the care of Dr. John Ware. Not merely the local and constitutional symptoms of phthisis were well marked, but there were strongly marked physical signs of an extensive tubercular disease in the upper lobe of the right lung. After a while she got well enough to resume her work; and about two years afterwards she was again admit-

ted with cerebral symptoms. She soon died; and, on examination, I found large tubercular masses in the brain. The upper lobe of the right lung, however, was throughout entirely healthy; but the corresponding bronchial glands contained a large, opaque, tubercular mass. This case, certainly, needs no comment. Two other examples may be mentioned, that occurred under my own care some years ago, and both within the same year. The patients were Irish servant girls, who, by another coincidence, lived in the same family. In each of them the local and constitutional symptoms, and also the physical signs were unequivocal; and in one the disease seemed to have progressed so far that her case seemed hopeless. Yet I met this last patient, perhaps two years afterwards, and in robust health. The other also fully recovered. It was, I suppose, the opaque form of deposit that existed and was absorbed, as this it is that gives the marked physical signs that were observed in the above cases. They would be found also in the case of the gray infiltration or "chronic pneumonia;" but this, as I have said, is a very rare disease here. According to Niemeyer, when the physical signs are well marked the prognosis is better, as indicating simply phthisis, and not tubercular phthisis.

As to the pathological connection of the different morbid products above described, I have long since ceased to believe that the opaque deposit originated from the gray. The gray, as has been often remarked of late years, is liable to degenerate, like many other and very different morbid products; and, in the case of phthisis, when it becomes opaque from such degeneration, it would perhaps be impossible to distinguish it from a deposit that was originally opaque. In some cases, however, and especially in children, there is no gray deposit, but it is altogether opaque; and in others this last is out of all proportion to the other; and, on the other hand, the deposit may be nearly all gray, with but little of the opaque. In one case I think there could have been none whatever of a deposit that was originally opaque.

Niemeyer maintains strongly that the idea of a diathesis as the origin of phthisis, independently of exciting causes, is as irrational as it is dangerous. He says a great deal, however, of the "vulnerability" of the constitution in phthisical subjects, and I cannot but think that his objection to a "diathesis" is rather nominal than substantial. The different morbid products that are found in phthisis generally coexist more or less; and though it is a very singular pathological fact that they should present such diverse appearances, and quite as singular that they should tend to remain distinct, yet I believe that they essentially and pathologically constitute one disease. and that a constitutional cause, or "diathesis," is at the bottom of it—whether the disease is in the lungs alone, or in these and a variety of other organs. The same author seems quite convinced that what he regards as the true tubercle (the miliary) originates from some caseous product that will be found in some other part of the body if not in the lungs; but this seems to be a mere assumption, which, if true, would hardly be susceptible of proof; and it seems much more reasonable to suppose that the same constitutional cause, with the help of a little excitant, produced at different periods of time the two different attacks of disease.

Where Niemeyer is treating of the predisposing causes of phthisis he refers to another author who has observed its complication with "diabetes mellitus, cancerous affections and round ulcer of the stomach," and he endorses the statement. Here, as elsewhere, we have seen phthisis supervene in cases of diabetes; but cancer has seemed almost to antagonize tubercular disease, though we have now and then seen exceptions. In ulcer of the stomach, which is sufficiently common here, I have met with the complication but once. A reduction of the general health by disease, whether acute or chronic, does not seem particularly to predispose to phthisis.

In confirmation of some of the above statements I will close this communication, already too long, with two extracts from a lecture that I gave in November, 1849, and of which, according to my usual custom, I made a record after it had been delivered: "Tubercle has been, and is still generally regarded as a formation *sui generis*—as something essentially distinct from what is commonly called chronic inflammation. But for several years, or many, I have held the opposite opinion, and regarded them as intimately connected if not essentially the same thing. A point of very great practical importance; for, supposing it to be established, we should then feel that the tubercular deposit might be removed, as we know the inflammatory to be," &c. "The fact of the absorption of tubercular deposits is susceptible of proof. By auscultation we may be sure of the disease in the human subject, in connection with other indications; and by dissection, at a subse-

quent period, we may prove the healthy condition of the lung"; and then, in illustration, I referred to Dr. Ware's case, above quoted.

A CASE OF EXTREME EXOPHTHALMOS, THE RESULT OF FIBRO-FATTY TUMOR OF THE ORBIT. OPERATION. RECOVERY.

By W. H. Triplett, M.D., Woodstock, Va.

Mrs. S., aged 22 years, of small, delicate figure, but healthy; married; has two children, the youngest nine months; living in the eastern part of Rockingham Co., Va., sent for me Nov. 29, 1869, for disease of the right eye. On Nov. 30, when I saw the patient, the affected eye was projecting beyond the lids, with an inclination towards the cheek of something like a half inch below the horizontal diameter of the opposite eye. The pupil was natural and the iris of a healthy appearance. The tension of the ball was normal.

This state of things revealed the absence of intra-ocular disease. The conjunctiva was enormously swollen and injected, producing so much pressure upon the cornea that a large, sloughy looking ulcer had formed on its lower section, nearly destroying its entire thickness, and would have, in all probability, let out the contents of the organ in a short time. The upper lid was large and purplish, and rested upon the surface of the tumor. When pressure was made upon the ball to reduce the dislocation it did not recede in the least, but the attempt at reduction developed a firm resistance in the orbit. Above, in the supra-orbital region, there was unusual fulness, and the presence of a hard tumor occupying the upper portion of the orbit was made out; which was so very firm and resisting under pressure that it was believed to be fibroid. It appeared to fill up pretty much the whole orbit, pushing the eye before it. The history of the case was rather singular, and for that reason I give some of its details.

Something over three years ago the patient noticed a gradual loss of vision in that eye. There was no pain in it. She was *enceinte*. Three months after total loss of vision, with entire absence of pain in the organ, she went to childbed and had an easy and natural labor, the child living. Very soon, in an hour or two after delivery, intense pain attacked the eye. She now applied for medical aid, as the distress was insupportable. It was treated as a neurosis, and sulphate of quinia promptly arrested the pain. It is not very likely that any amount of scientific skill could have made anything else out of the case or suggested a better treatment.

After convalescence from childbed, she first noticed that her eye was a little popped—"a little fuller than the left eye," as she said. After this she frequently suffered from circum-orbital pains, "but when they became unbearable she always stopped them with morphine or quinine," and she had sometimes several months of rest or intervals between the pains. But the eye became more and more prominent, till, finally, she could not close the lids over the ball.

During the spring of 1869, Dr. I. W. Wynsborough placed the patient upon full doses of "Fowler's solution," and had the great satisfaction of noticing considerable improvement in her condition, so that she could close the lids entirely over the ball. But when it was hoped she was making a rapid recovery, presently pains set in again, and the eye became more prominent than ever. Since that time the disease has steadily progressed. At the time of the operation, I believed, from what I could make out for myself, that the disease was fibroid tumor of the orbit, which had originated in the locality of the optic nerve and early involved that organ, causing the first symptom of loss of vision.

Assisted by Drs. W. O. Hill, I. W. Wynsborough, Wolf and Conway, the patient was placed under chloroform, and a grooved needle was introduced below the supra-orbital arch into the tumor to ascertain its consistence; it seemed to be solid. The head resting on a low pillow, an incision was made through the outer canthus about three quarters of an inch in length, and the lid reflected over the orbital arch. The tumor was now seized with a vulsella, and a knife carried around it to divide the palpebral conjunctiva, which was very much thickened by plastic exudation and vascular dilatation. The dissection was difficult, on account of the firm adhesions of the growth. When the knife was carried into the deeper portions of the tumor, a quantity of cheesy, granulated fat escaped, intermixing with the blood, which flowed pretty freely.

I could not find a proper capsule, but strong bands of fibrous tissue confined the collection in front, and larger portions were with difficulty taken from the sides and bottom of the orbit. The optic nerve was

healthy, but entirely surrounded by the growth. Hæmorrhage was arrested by free application of cold water.

On recovering consciousness she did not complain of pain, but suffered some nausea from the chloroform. She was placed under a full dose of morphia, and cloths wet with cold water were kept constantly over the parts. No filling of any kind was placed in the orbit, believing all such applications irritating and vicious, and to be tolerated only on the ground of *necessity*. The patient made a rapid recovery.

January 7, 1870.

Selected Papers.

EFFECT OF OPIUM AND ITS DERIVATIVE ALKALOIDS.

[Dr. S. Weir Mitchell has been continuing his experiments on the effect of opium and its derivative alkaloids upon birds. He gives a report of his work in the *American Journal of the Medical Sciences*, and sums up as follows. He states and answers a question as to the absorption of opium from the digestive organs of birds.]

M. Bernard has divided the effects of the various opium alkaloids into three classes, soporific, convulsive and toxic; one or other of the three being predominant in the case of each of these agents, but not of necessity to the exclusion of the other two. M. Baxt in like manner arranges them under the two heads of convulsives and narcotics, while Harley is disposed to consider that all of them are alike excitant, and hypnotic in varying degrees. Each of these observers may be absolutely right as regards the physiological reactions of the alkaloids in question, considered with reference to certain animals, but the attempt to apply their conclusions broadly so as to include birds, only serves to show the great necessity for caution in all such deductions.

Let us compare the results obtained by Bernard and Baxt with my own, premising that as yet, with the exception of morphia, these alkaloids have been as thoroughly studied as belladonna or woorara, and that neither Bernard's classification, nor Baxt's, nor mine, is more than a mere toxicological sketch.

M. Bernard believes, as I have said, that the opium alkaloids have three properties or powers: 1. Soporific; 2. Excitant or convulsing; and 3. Toxic. He classes them thus in the order of their power.

Excitant or Convulsive Agents.—1. Thebaine. 2. Papaverine. 3. Narcotine. 4. Codeine. 5. Morphine. 6. Narceine.

Soporifics.—1. Narceine. 2. Morphine. 3. Codeine. The three others have no soporific force.

In capacity as Poisons, viz., Toxics.—1. Thebaine. 2. Codeine. 3. Papaverine. 4. Narceine. 5. Morphine. 6. Narcotine.

What strikes us most about this arrangement is the want of relation between toxic power and capacity to convulse, as instanced in the position of narcotine, and the high place as a soporific assigned to narceine.

Waldemar Baxt, quoted in *American Journal of Medical Science*, October, 1869, regards the opium alkaloids as either narcotic or tetanically convulsive. In narcotic energy he arranges them thus: 1. Papaverine; 2. Morphia; 3. Narceia; 4. Codeia; &c. As convulsives, thebaine stands first, porphyroxin second, narcotine third, codeia fourth. Dr. Harley's view from this standpoint varies from that of Bernard or Baxt, and there are so many discrepancies among the three observers as to indicate the need for a still further examination of the subject. For reasons already pointed out, I have limited my own experiments to birds, and despite the statement of Bernard as to the power of morphia, codeia, and narceia, to produce in pigeons and sparrows the forms of sleep which he regards as peculiar to these drugs, I have been unable to detect anything in this direction, beyond a slight tendency to quietude, which we can never be sure is not due to the habit of the wounded or sick pigeon of seeking a remote corner and remaining at rest.

As regards power to stupefy, I can therefore make no classification. My experience with cryptopia has been too limited to allow of any positive conclusion. All but two of the other alkaloids examined by me cause convulsions, but thebaia alone appears to be truly a tetanizing poison, although in the duck, and rarely in the pigeon, morphia caused spasms, which may be termed tetanoid. Thebaia stands highest in rank as a convulsant, and is followed in order of power by narcotina, codeia, and morphia, meconine and narceine having no such influence. In this arrangement of narcotina I agree with Bernard and Baxt. Neither of them makes mention of meconine, which Harley regards as distinctly hypnotic, but which is almost without influence in the pigeon, even when given in enormous doses.

My own arrangement of the relative poisoning power of the substances we are considering would be as follows:—

1. Thebaia; 2. Codeia; 3. Narcotina; 4. Morphia—Meconin and Narceina being too innocent for addition to the list. It will of course be remembered that this statement applies only to birds, and chiefly, indeed, to pigeons.

The conclusions which I have finally reached in regard to the influence of opium alkaloids on birds are as follows:—

1. Birds—namely, ducks, chickens, and pigeons—are never poisoned by crude opium, its aqueous extract, or acetum opii (black drop), given internally; while the salts of morphia must be given in enormous doses to produce fatal effects when administered in the same manner.

2. Morphia salts, used hypodermically in excessive amounts, never cause sleep or stupor, but act as excitants (convulsants) upon the motor centres. In some instances, the spasms are tetanoid in character; but in the duck they approach nearest to the typical strychnic spasm.

3. Thebaia is a tetanizing agent, only inferior in energy to strychnia and brucia.

Narcotina, almost inert in man, destroys birds when employed hypodermically, in doses of from 2 to 7 grains.

Codeia is a fatal convulsing agent in birds (pigeons).

Meconin causes emesis when given internally, and is harmless if placed under the skin.

Narceia has no perceptible influence, except to disturb slightly the respiratory function.

Cryptopia in doses of 1-5 to 1-2 gr. has no effect.

None of these agents cause sleep in the pigeon, duck, or chicken.

The inaction of ingested opium is due, as I believe, to two causes.

First, to the very great slowness with which it, as well as morphia, is absorbed. This is shown by the fact that, twenty-four hours after a full dose has been given, the pigeon may vomit it in large quantities. In a few cases, the greater bulk of what I had given was thus rejected; but in many others all was retained.

The remaining amount of protection necessary to constitute an insurance against fatal results, must be due to the great difficulty with which pigeons, especially old birds, are poisoned by opiates. Probably elimination is sufficiently rapid to protect the system against a dangerous accumulation of the drug; but since the fæces and urine are evacuated from a common cloac, I have been unable to study the rate of excretion in a satisfactory manner.

Pigeons, and probably other birds, seem to possess the same peculiarity which causes certain men to exhibit, under opiates, only excitement of the motor ganglia, emesis, and a restlessness, which, with fuller doses, might possibly eventuate in convulsions—a rare incident of opium poisoning, which, however, occurred early in a case that I have elsewhere reported. The normal sleep of these birds is not nearly so profound as that of man; and, on the other hand, their motor nerve system enjoys the faculty of evolving an enormous amount of force, and, as compared to their cerebral manifestations, is far more prominent. It is possible that we may discover that equivalent doses may affect more profoundly, in the direction of stupor, the creature taking them in proportion as its cerebral development is greater and its brain more active. Such, at least, seems to be the probable conclusion from a general survey of the effects of morphia on various classes of animals; while, especially in mammals, it will, I think, be discovered that individual peculiarities come in to modify the result, as they never so distinctly or so frequently do in the lower grades of animal life.

I had suspected that the enormous respiratory apparatus of birds might have some share in protecting them from opiate poisons; and this may possibly be the case, but I may add that I have failed to make it sure by the aid of experiment. An elaborate series of nearly an hundred experiments were made, to discover whether oxygen gas would increase this protection, and whether a small percentage of carbonic acid in the air breathed would plainly destroy it, and cause to be fatal doses which are not otherwise lethal. The great labor thus expended failed to afford any other than a negative result, and only left it clear to me that the inhalation of oxygen does not protect the system which has been attacked by morphia.

Genesis and Geology.—Agassiz has repeatedly been charged with unbelief in the book of Genesis. He replies that this is a gross falsification, in words and spirit. He stands upon his published record as expressed in the last chapter of the first volume of his Fossil Fishes, or the Essay on Classification, or the first volume of the contributions to the Natural History of the United States, on his Geological Sketches, and on his Methods of Study.—*New York Medical Gazette.*

Reports of Medical Societies.

NORFOLK DISTRICT MED. SOCIETY OF MASSACHUSETTS. REPORTED BY WM. H. CAMPBELL, M.D., OF ROXBURY.

A REGULAR quarterly meeting of the Norfolk District Medical Society was held at the Everett House, Hyde Park, Jan. 12th, 1870, at 11, A.M. The President, Dr. Cotting, in the chair. The records of the preceding meeting were read by the Secretary, Dr. Jarvis, and accepted.

The District Censors announced that they had examined and admitted into the Massachusetts Medical Society Dr. James Morrison, lately of San Francisco, Cal., who, being present, signed the By-Laws, and was introduced by the President to the Society.

The discussion being now in order, on *Peritonitis, Idiopathic and Puerperal*—

Dr. J. Stedman, of Jamaica Plain, read a paper, in which he gave the views of modern writers, to the effect that purely idiopathic peritonitis was a very rare disease—that peritonitis generally was incidental to some other affection of the abdominal viscera; the most frequent cause, exclusive of its occurrence in puerperal cases, being perforation of the alimentary canal.

He stated that the treatment of idiopathic and puerperal peritonitis should be conducted on nearly the same principles.

First, and of great importance, was pure air, of a dry and even temperature;

Second, the administration of opium (commencing with the sulphate of morphine) in proper doses and sufficiently often to remove pain and quiet restlessness, as also to control the action of the heart and the number of the respirations;

Third, the proper administration of nourishing and easily digestible food, and some gentle stimulant if there be any danger of sinking.

Bleeding, purging, or mercury would do more harm than good.

In puerperal cases he recommends the daily syringing the vagina with a weak solution of permanganate of potassa, and the giving of chlorate of potassa internally.

Dr. Stone, of Walpole, referred to two cases which had come under his notice in which peritonitis had proved beneficial by arresting the growth of ovarian tumors; and in one of the cases obliterating the tumor. In the treatment of peritonitis he believed that opium was the chief remedy to be relied upon.

He spoke also in favor of the use of liniments containing chloroform, which should be applied on cloths and covered with oiled silk, as relieving vomiting and pain.

Dr. Tower, of South Weymouth, read a paper, going over pretty much the same ground as Dr. Stedman, quoting Flint and Aitken as holding that idiopathic peritonitis is a very rare disease. He said that formerly the treatment had been prompt and heroic on account of the urgency and violence of the disease; but that mercury had been resorted to traditionally and did no good, and bleeding might do harm. Cathartics were condemned. He recommended opiates in large doses, even to as much as half a grain of morphine in solution every two hours. He spoke of a case of peritonitis following an adherent placenta treated throughout by morphine in doses sufficient to keep the patient free from pain, with complete recovery. He also spoke of a case following criminally induced abortion, in which there was pelvic cellulitis and peritonitis, as shown by *post-mortem* examination, there having been little or no pain to indicate the extent of the disease.

Dr. Tower spoke of using disinfectants on the hands after visiting erysipelatous patients, and asked the opinions of the members.

Dr. Tucker, of Stoughton, gave his experience in the matter, and said that he had noticed a connection between erysipelas and peritonitis, which in his opinion ought to be oftener recognized by physicians than it has been. He related several cases in which there was a seeming connection between peritonitis and erysipelas; as, for example, one case in which, during the prevalence of erysipelas, two children of the family had the disease, and the mother, who watched one of them, being then in an advanced stage of pregnancy, after delivery became affected with peritonitis and died of it. Shortly after attending to this case he took care of another parturient woman, and she also had the disease; and he thought now, although he did not recognize the fact at the time, that perhaps he carried the disease from one to the other. He thought, too, that peritonitis may be caused by the discharge from foul wounds or ulcers.

Dr. Tucker spoke also of a case in which there were violent pains and great tenderness in the epigastric region, which subsided at once on the appearance of an erysipelatous eruption on the back. He thought the peritoneum was not unfrequently attacked with an erysipelatous inflammation, constituting one species of peritonitis, and

instanced the case of a young lady of 17, who, with her father, visited a family 20 miles distant afflicted with erysipelas, and within ten days after their return she was attacked with all the symptoms of peritonitis, which proved fatal in about eight days; while, three days after she was taken, the father had a severe attack of erysipelas of the face, extending over the scalp, from which he barely recovered.

As for treatment, he advised the application of leeches over the tender points, and the exhibition of opium, as needed, and fomentations.

The discussion now becoming general,

Dr. Alden, of Randolph, said that most of the cases he had seen, had originated in local causes. In puerperal inflammation the former practice had been to bleed freely. The present fashion is to give opium. At any rate we should *do something*. The particular measures must be decided by the indications in each case. Bleeding, to be useful, must be resorted to early. In some epidemics no treatment seemed to be successful.

Dr. Gilbert, of Dorchester, related a case in which champagne in large quantities had seemed to prolong life, when other stimulants had failed to do any good, and were badly borne.

Dr. Burgess, of Dedham, saw very many cases during an epidemic which occurred in the Dublin Lying-in Hospital, while he was an Interne. Whatever the treatment there, nearly every case proved fatal. The cases seen in private practice here proved of a much milder type. He thought the causes were in a measure avoidable, especially in the puerperal form, by more care in the management of the patient during delivery, &c.

The fact of its communicability no one can doubt who has read the reports of the Vienna Hospital.

In the treatment he would give opium to secure rest at night, but in the day only enough to allay the urgent symptoms. At the same time he would give all the food possible, and stimulants as the case required.

Dr. Holmes, of Milton, said that while agreeing in the main with the opium treatment advocated by the other members, he believed that an important thing had been omitted, and that was stupes of oil of turpentine, which he said were best applied on some kind of large leaf, which should first be wilted and then rolled out flat and smooth. This fomentation should be followed in a short time by a flaxseed meal poultice; and this whole process repeated every six hours or so, till relief was obtained. A short time should elapse between the removal of the stupe and the application of the poultice, to prevent the smarting sometimes occasioned by the turpentine. The above had been suggested to him many years ago by Dr. Miller, and the results had been very satisfactory.*

Dr. Cushing, of Dorchester, thought that the question of the liability to contagion was of the utmost importance. There were two views taken, and it was proper to have some definite opinion. If physicians carry the disease, the fact should be known, for the physician's duty is to aid the woman and especially not to increase complications; and if, instead of carrying safety, he carries danger, it would be well to know it. He thought that since the question was undecided and until it was settled in the negative, it was the physician's duty to abstain from attending parturient women while attending patients with puerperal fever, and that the occurrence of one case of puerperal peritonitis in his practice should be a warning to him to stop visiting such patients till he had got clear of the infection. How long it would take to do this, seemed to be a question; a month at least should elapse before attendance on a new case. He thought it was the bounden duty of a physician to refuse to attend any second woman after one such case of peritonitis occurred in his practice. He should feel that he was responsible for the second case if two occurred in his practice in succession, unless such measures had been taken as would make it reasonably sure that he was not the medium of communication.

Dr. Edes, of Roxbury, said that at the great Lying-in Hospital at Vienna the hands of the attendants were cleansed previous to each examination, first with soap and water, then with chlorine water, and then with a solution of permanganate of potassa.

After some further desultory remarks on the subject by Drs. Gilbert, Campbell, Green of Dorchester, and others:—

The President said that although idiopathic peritonitis was quite rare he had met with an occasional case where it could not be traced to any other affection—once in a gentleman who recovered from the attack. Peritonitis might occur in parturient women unconnected with other diseases; but puerperal fever was another and a peculiar disease, which peritonitis often accompa-

* The President, at this point, referred the members to a suggestive article on *counter-irritants* by W. H. Dickinson, in the August number of *The Practitioner*.

nied, though not necessarily. Puerperal fever, though generally sporadic, was now and then epidemic; and when epidemic, sometimes seemed to be contagious also. It would be well in practice to act on the possibility of contagiousness, though the kind of reasoning brought to establish it, might prove the same of almost any other disease. In an epidemic some years ago, while attending eleven cases of labor, four patients, nowise connected, had puerperal fever. In these cases there was evidence sufficient to satisfy his own mind that there was a period of incubation beginning before the labor. At any rate, the circumstances were such as to preclude the idea that he carried the disease to these four; and others whom he attended at the same time received no harm. If a practitioner must give up further attendance on the occurrence of a case of puerperal fever, in strict logic he must abandon such practice altogether, as the proper time for return to it could not be stated, for even after a year's absence a first case on resumption has been followed by this disease. Nevertheless this was not too great a sacrifice, were the necessity evident. But cases of puerperal fever were almost always present in large communities, coming without known cause, and entirely disconnected with each other; and not communicated, though as a general rule little or no caution was taken. A succession of cases in an individual's private practice is of rarest occurrence; if anything, more rare than in other diseases beyond suspicion of contagiousness or of being conveyable by attendants. In Vienna a long interval of exemption, since interrupted, was attributed to the customs, spoken of today, which had been adopted there; while in other places a similar exemption was ascribed to segregation and fresh air. Every practicable precaution should be attended to. A filthy doctor was an abomination not to be tolerated at any time. Many agents are loosely called disinfectants. Some of these are deodorizers, and very useful as such; while others leave as bad odors and as irrespirable airs as those for whose removal they are employed. And of what avail is the addition of smoke, of any kind? Such a thing as a true disinfectant, one that will destroy disease or its "germs," is unknown. Besides, as Dr. Proctor says, "there is no evidence to show that any infectious disease is of necessity associated with odorous matter."—(*Monthly Med. Rep.*, No. III., p. 199.)

Erysipelas is a dangerous complication, as much so for a parturient patient as for one recently amputated; and from somewhat analogous reasons. He had known, however, the external organs to be invaded by erysipelas immediately after labor without inducing puerperal fever in the patient herself, or affecting injuriously another in an adjoining bed. A prominent teacher recently declared to the British Association that in private practice two thirds of the cases of puerperal fever arose from scarlatina, and in hospitals the same proportion from erysipelas. Probably there can be adduced as good arguments for the one statement as for the other, and yet neither be true. An association of diseases, however frequent, is not positive proof of their identity, or of their being causes one of the other. We do not often hear of puerperal fever producing scarlet fever or erysipelas, which we should, were the diseases convertible. Some diseases generally appear in connection with each other, but it is not usual, if it be possible, for a disease to begin as one thing, and then "run into," become, and end as, another and quite a different disease.

The various allegations alluded to, whether hitherto proven or not, and the proof rests with those who make them, should exact the greatest caution of practitioners, and stimulate to further and more accurate investigations.

At 2, P. M., the Society adjourned.

Bibliographical Notices.

Handbook of Diseases of the Eye, their Pathology and Treatment. By A. Salomons, M.D., Fellow of the Massachusetts Medical Society, &c. Boston: James Campbell. 1870.

A useful handbook of ophthalmology, substantially correct in its statements, and published in an attractive form. It gives an intelligible *resumé* of the principal affections of the eye and the chief operations to be undertaken in this department of surgery. The author exhibits a remarkable power of condensation, as examples of which we would point to the article on diphtheria and the section on accommodation and refraction.

The typographical errors are more annoying than numerous; sometimes, however, might lead to a serious misunderstanding, as in the statement (page 1) that the mirror of the ophthalmoscope is ordinarily convex.

On the whole, this little work is well adapted to fulfil its purpose of giving the student a table of contents of the science of ophthalmology, and serving him as a general guide book to the country he must himself explore. H. D.

Medical and Surgical Journal.

BOSTON: THURSDAY, FEBRUARY 10, 1870.

NOTES ON CURRENT TOPICS.

Phrenological Materialism.—On pages 196 and 197 of the *Journal of Psychological Medicine* for January we find these words:

"This work on Phrenology [a book by James P. Browne, M.D., of Edinburgh] brings to mind the one great thing that must be said in favor of this so-called science. The division, excited by many of the books on this subject, is apt to prevent the reader from giving the credit that is due to the results achieved by the many scientific men who at one time and another have been favorable to the central idea around which the phrenological doctrine is grouped. It is mainly to the labors of those who have inculcated the doctrine of the localization of faculties, that the metaphysical conception of mind, as an entity separated from and at continual variance with matter, has become a thing of the past, and in its place substituted the conception of a force developed from and dependent on the changes induced in a material substratum, the brain. For their timely aid in achieving so great a work, not only in popular but in professional opinion, scientific men are their debtors, and it is but just that, in condemning their errors, we should accord credit to whatever of truth may be found in their system.

"No fact is more certain than that a living brain, normal in size and supplied with a due amount of good blood, will manifest the phenomena of healthy mind, and that the moral and emotional qualities of this mind will be the resultant of the conditions under which the brain is developed and surrounded. In other words, were it possible to accurately determine and appreciate the circumstances that have surrounded an individual, as well as the hereditary predisposition he possessed, his character could be determined with as much accuracy as an eclipse can be predicted."

That is to say, a man's character is the resultant of the hereditary and surrounding influences appertaining to him. "I will! I choose" ! are a sufficient refutation of the statement. The metaphysical argument in opposition to it is as impregnable now as it ever was. The innate idea of mind developed in every form of civilization, through all history, is not to be blotted out by a few theorists, who think to deny its existence because the scalpel does not find it in dissecting dead nerve fibres, or because the microscope does not detect it among nerve cells. We have previously written upon this point; and will therefore now confine ourselves to the remark that anatomy and physiology do well when they deal only with objective investigations on the formation and the phenomena of the body, and leave the subjective manifestations of the mental essence to the domain of metaphysics.

Another Phase of Heredity.—In the notice we have before given of late papers which have discussed the subject of heredity, we have failed to discover much that is new save in the matter of sex-digitism so-called. Beside some slight allusion to the recent theory that the alleged pernicious results of consanguineous marriages are due to the breeding in and concentration of previously exciting hereditary taints instead of the creation of new ones, little or nothing is advanced which has not been set forth before, and fresh collections of facts are not adduced to confirm the old. The most striking original theory on this head which we have met with of late, is in a work of *fiction*. "Many a truth is said in jest" is applicable to its author; and we also strongly suspect that in a romantic garb our Professor of Physiology has clothed an interesting fact relative to hereditary transmission. We refer to the remarkable book called "The Guardian Angel." Turning aside entirely from the controversial theology of this story, which latter we cannot too much admire for its strength and beauty, we call attention by a word only to the physiological thesis propounded in it.

The heroine is made to inherit from her ancestors on one side tendencies toward those virtues which are the source of dignity, safety and repose; but also qualities

from her forbears on the side of her other parent of wild, fantastic, and dangerous passion. At one period of childhood and adolescence, the second set of influences have sway. Events disclose the precipice to the brink of which these latter have brought her, and noble motives, together with a pure affection, woo her to *her better nature*, which now develops itself rapidly. She finally *chooses* (mark the words!) *her better self*.

Now, herein is wrapt what we believe to be a truth which writers have said very little about. They tell us that a child inherits the physical qualities of one parent, and the mental qualities of the other parent. In the same breath they inform us that sometimes the offspring does not receive its parent's peculiarities at all, but those of one or another remote ancestor. The phenomena of heredity are often presented in an undigested mass, and hastily generalized so as to clash with each other. The fact we allude to is, that occasionally, at least, some ancestral qualities manifest themselves at one period of life, while those belonging to other ancestors are developed at a later stage of the existence of the same individual. This is certainly to be observed in physiognomy—the young child looking like one parent, and when it has become an adolescent or adult resembling the other. Analogy, we know, is not proof. But it may start a presumption in favor of a theory.

Medical Journals in the United States.—The comments of the London *Medical Times and Gazette* on the defects of medical journalism in this country, suggest to us what any one who has access to the exchanges must see—that we need fewer journals, with liberal payment of professed writers and investigators. Dilution and trituration, whether in point of contributors or subscribers, do not work well in medical literature. The *Times and Gazette* advises less dependence on foreign sources than now obtains. Bye and bye we may have so many facts to present and so much to say, that we shall have little room comparatively for the re-printing of and translating from trans-atlantic articles. But, at present, we opine, a good service is rendered to the medical reader in laying before him the wheat winnowed from the chaff of European journals. First-rate writers among us, however, have taken the field. Let others join them, and we may eventually have a full equivalent to give for what we receive. We should add that all is not solid gold in foreign medical writing. A friend of ours often finds in it many words in proportion to the substance—something, in fact, which looks very much like *writing against space*.

A new Die wanted for the Broad Seal of the City of Boston! The present die in danger of being soon worn out! Acknowledgments of affidavits extraordinary by the medical Mayor of Boston, and by the Governor of Massachusetts! To what base uses may we come at last!—If the time of our Governors and Mayors is to be taken up in acknowledging affidavits for the advertisements of medical practitioners, their salaries should be increased—or something. Read the following!—

To the Editor of the Boston Daily Transcript. Sir,—The remarkable benefit which I have derived from Dr. Dewey's treatment in my case by inhalation induces me to make it known through your columns for the benefit of the public.

For three years I have suffered from bronchitis and catarrh, complicated with spasmodic asthma. I have steadily grown worse, notwithstanding I was under what was considered the best medical treatment that could be procured in Boston, Massachusetts, and Savannah, Georgia. My breathing was so oppressed that the slightest exertion rendered life a burden. The day I placed myself under Dr. Dewey's care, the 20th day of October, 1869, my sufferings were beyond description. He examined me carefully, prescribed medicines for me to inhale in different ways. Happily for me, I no sooner commenced his treatment than I found such relief as I never hoped to experience again in this world. From that day to the present moment I have gone on steadily improving, until to-day my breathing is free, distress has vanished, and I thank God again for the enjoyment of fresh air in my lungs to invigorate and strengthen me. I am now able to exercise freely without any oppression in breathing, and, in fact, I feel like a victim freed from the grasp of a relentless enemy. I am truly grateful that I ever

saw Dr. Dewey, and placed myself confidently under his treatment. I give this statement voluntarily, as a duty I owe to those who suffer as I have done.

Respectfully, CHARLES HINCKLEY,
No. 50 Beach St., Boston, Mass.

Commonwealth of Massachusetts.

Suffolk ss. Boston, 15th Nov., 1869.

Then personally appeared before me the within named Charles Hinckley, and made oath to the truth of the within statement subscribed by him. In witness whereof, I have hereunto set my hand and the seal of the said city of Boston, the day and the year above written.

NATH. B. SHURTLEFF, Mayor of Boston.

Suffolk ss. Boston, Nov. 25, 1869.

Then personally appeared the said Charles Hinckley, and subscribed and made oath to the truth of the above statement.

Before me, WM. CLAFLIN,
Governor of the State of Mass.

Dr. Dewey's statement of Mr. Hinckley's case.—His case was one of chronic bronchitis, œzena, complicated with spasmodic asthma, caused by the irritation of the air cells of the lungs from cold, and forming one of the most dreadful maladies to which man or woman is heir; in fact, a species of slow suffocation. The chief features to be observed in the result of the treatment by inhalation, which was most satisfactory in this instance, were the immediate benefit derived, as well as its continuance, and the great relief from all the distressing symptoms so greatly expressed by the patient.

D. B. Dewey, M.D., may be consulted personally at his office, No. 5 Harrison Avenue, on all diseases of the throat, chest and lungs, embracing catarrh, sore throat, bronchitis, asthma, consumption and heart disease, to which branch of the profession his practice for seventeen years has been exclusively confined.

The above testimonial of Mr. Charles Hinckley, whose authenticity is attested by the Mayor of Boston and the Governor of the Commonwealth, is selected from numerous others, which can be seen at my office, 5 Harrison Avenue.

For a thorough examination of the chest, $2.00.

RIGHTS OF THE MEDICAL STAFFS OF HOSPITALS.—Says the *Medical News and Library*:

* * * "It is one of the anomalies of the present age that medicine, which was never before so full of knowledge and power, nor so lavish in conferring benefits upon society, should, nevertheless, be so generally decried by teachers of philosophy, and subjected to such wanton insults by those it has most efficiently served.

"In the army and navy, not only of the United States, but of Europe also, the claims of the medical staff to an appropriate rank are treated by the political authorities with derision and contempt.

"The wise and enlightened counsel of our brethren to Boards of Managers concerning the construction and economy of hospitals is unceremoniously thrust aside; their administration of medical and surgical offices is sometimes interfered with, and they are made to feel, as far as can be, that, not educated, scientific, and skilful physicians, but managers and trustees, albeit entirely destitute of professional knowledge, are the proper and rightful judges of medical questions, and are entitled to the power, which in fact they exercise, of overriding remonstrance and despising advice. This conduct appears the more extraordinary, as it is certainly the more offensive, when it is remembered that in this country physicians serve the hospitals gratuitously, while everywhere else their services are remunerated.

"The reasons for these anomalies, it appears to us, are two in number. The one is that physicians, by unselfishly giving their time and skill to public institutions, have cheapened their value. The other is that the superficial and illogical education, which even the lowest classes of society now obtain, has created a class of critics and judges whose dogmatism is on a par with their ignorance, and whom no fear of disastrous consequences deters from rash experiment and arbitrary innovation.

"It seems, therefore, to be high time that whatever of manliness and independence there is in the medical profession should be aroused, and that the managers of hospitals should be told, respectfully but plainly, that they are not the owners in fee simple of these institutions, but only administer them in trust for the public who support them, for the sick to whom they are devoted, for the physicians without whom they could not exist, and for the students of medicine to whose education they are indispensable."

Well said! Is it not time that the medical attendants of hospitals which are supported by wealthy city or State governments should be paid? The moment we rescind all regulations and tacit understandings making it a professional obliga-

tion to give our services to public institutions supported by wealthy corporations, though for the benefit of the poor, that moment those institutions are obliged to provide reasonable salaries for their medical officers. Hospital trustees or Governors will hardly take up with a poor article of cheap or gratuitous doctoring for the sake of saving a few thousands to the public purse, and will compete for the best men, as much as the professional men will compete for the offices. Where the hospital is an offshoot of the convent or monastery, and when it is supported by private benefactions of any kind, let us serve as heretofore, without money and without price. But, the indiscriminate donation of our time, thought, and dearly-earned skill, to private persons or public corporations who are able to pay for them, causes our professional services to be undervalued, and it is too often throwing pearls before swine. The course we recommend is advocated by the *London Medical Times and Gazette.*

ACONITE AND COLCHICUM.—Dr. Henry Power in the *Practitioner* recommends the use of aconite and colchicum in various rheumatic affections, and especially in those of the eye.

ACONITE.—At a meeting of the Medical Society of the County of New York, Dr. Pomeroy had frequently seen disastrous effects from over doses of aconite, taken by mistake or prescribed according to the rules of the text-books. In his experience this drug was almost always given too freely; and he could hardly imagine a patient taking five drops of Fleming's tincture every hour, without serious consequences. But in small doses, frequently repeated, its action was most happy. In combination with colchicum and iodide of potassium, he had found it of great service in rheumatism. Its special tendency to act upon the throat made it valuable in acute tonsillitis and other inflammatory affections of the fauces.

Dr. Caro had tried aconite on a man suffering from purpura hæmorrhagica, hæmatemesis, and meningitis. The pulse being strong, he had given one drop of the tincture every two hours, and it had paralyzed his patient.

Dr. Peters said that a case of purpura hæmorrhagica was the very last one in which he would use aconite. This drug tended to cause fluidity of the blood; and, in cases of poisoning, it produced large vibices on the surface and soft clots in the great vessels. But if the doctor would use it in cases of an exactly opposite class—in those of sthenic inflammation, with excess of fibrin—he would doubtless often find it serviceable.—*New York Medical Record.*

MR. EDITOR,—Having read in your JOURNAL of Jan. 15th a communication from "Lamoille," in reference to a "Collegiate Agency" in Philadelphia, I herewith send you a copy of a correspondence had with the same agency. Having obtained one of the cards, I at once wrote to the agency, as I was *desirous* of obtaining some *additional particulars.*

This correspondence was brought before our County Medical Society to-day, and action taken thereon.

These frauds are not, however, confined to the "Collegiate Agency"; some of our medical schools are also engaged in this nefarious business. During my residence in this county, no less than three diplomas have been obtained from medical schools by purchase, and were *sold* in each instance to notoriously incompetent practitioners of medicine.

Hoping that such exposures will have a tendency to cause all members of the regular profession to exert their utmost influence in having a stringent medical registration law enacted in their respective States, I am yours respectfully,

CHAS. H. LOTHROP.

Lyons, Iowa, Jan. 18, 1870.

[COPY.]

LYONS, IOWA, NOV. 22d, 1869.

A. J. HALE, M.D.,
214 Jacoby St., Philadelphia, Penn.

Dear Sir,—I have just received one of your cards, saying that an agency had been established for the purpose of giving information, &c., and the obtaining of diplomas for the different degrees. I wish to know by what means and the cost of obtaining a diploma from the University of Pennsylvania or New York.

I wish to get an M.D. I have been in the practice of medicine more than ten years. I have studied the required time, but was poor. I wish now to get the degree if it does not cost too much. Please give me all the information you can in reference to it; also your charge for getting it for me. Yours truly,

CHAS. H. LOTHROP.

[Copy.]

PHILADELPHIA, Pa., Nov. 25th, 1869.

Dear Sir,—Yours of recent date to hand. You can obtain, through the recommendation of this agency, the degree of M.D. from a first class institution, for instance "Medical University" of this city. The faculty of this institution, which is at present in active operation, will grant you a diploma at a cost of $50; when two is granted at the same time, that is through the influence of the same person, for a different name, they can be had at $80 for the two. In other words, if you can influence another to take out a diploma, you save $10 to yourself. And *three* besides yours make yours (or the fourth one) *free gratis*. They will be sent you by express C. O. D. as soon as I receive your names in full as to enable me to have them printed correctly on diploma.

Let me hear from you soon.

Respectfully, A. J. HALE, M.D.,
214 *Jacoby St., Phil.*

SLAUGHTERING.—From the First Annual Report of the State Board of Health of Massachusetts, we take the following passages:—The condition of the Brighton slaughter-houses described in 1866, says Dr. Derby, has not been improved upon since that period. "They are even more offensive now, because their number has increased, and a larger population is exposed to their influence. There are now about fifty slaughter-houses scattered through the town, none of them of great magnitude, each occupied by a single individual or firm, and each a separate centre of polluted air. The combined effect is familiar to all who pass the Allston Station, on the Albany Railroad, in the summer months, or who drive through the town by the common roads. It is perceptible on the other side of Charles River, in Cambridge, when the wind blows in that direction. *It is entirely due to putrefaction, and chiefly of animal matter.*

"The great source of offence in all these establishments consists in the manner of disposing of the parts of the animal used neither for food nor in the arts. In the ox these parts are, the larger portion of the intestines and all of their contents, the 'omasum' or third-stomach, the spleen, the lungs, and about half of the blood. In the sheep, the intestines, spleen, stomach and all of the blood. Every slaughter-house has a piggery into which are thrown all these portions of the cattle and sheep. The result is a putrid mass, consisting of blood, which decomposes almost as soon as it falls upon such material, the excrement of the animals killed, and of the hogs, the half digested food contained in the entrails, and the offal itself, covered with decomposing matter. In this filth the hogs wallow. At uncertain intervals it is scraped out and banked up on the ground (often very spongy,) to await a purchaser, or is carted off to be spread upon land. The track of these carts is evident on the roads, both to sight and smell. The fat is carted for long distances in various directions, a portion going to Roxbury, another to Watertown, another to Cambridge and elsewhere. The portion of the blood of cattle which does not go to the hogs is taken away for the sugar refiners, but often not until it has become disgustingly putrid.

"The heads and feet are taken to the bone-boilers and glue-makers; the hides to the tanners. This general description of the disposition made of different parts of the slaughtered animals applies to all the towns about Boston where the business is carried on, except Cambridge, which city prohibits the keeping of hogs. The offal is taken from Cambridge to Lexington and elsewhere.

"The floors of the slaughter-houses are of wood, and are saturated with blood. In most of them there is no sewerage; generally an imperfect drain leads to some marsh or low piece of ground; sometimes to a brook. The surrounding ground is filled with decomposing matter.

"*The Slaughter-House Piggeries* are objectionable on the score of health: *first*, because they produce a questionable if not positively unwholesome kind of pork; *second*, because they poison the air of their neighborhood.

"The pig is almost the only quadruped feeding, in whole or in part, on flesh, which civilized man is willing to eat, unless pressed by starvation; among ourselves the only exceptions are the bear and the raccoon, and meat is not the chief food of either of these animals.

"The slaughter-house hog not only eats flesh, but flesh in a state of putridity, and is therefore entitled to be regarded as the *carrion beast*. If he is good to eat, so are the crow and the buzzard. Few persons would be willing to eat him if they saw him in his putrid sty, with wreaths of entrails hanging about his neck, and his body smeared with blood. We are not prepared to assert that eating pork fed in this way is productive of any special disease, parasitic or otherwise. It would be very difficult, and perhaps impossible, to prove. Butchers

often say that pigs fed on beef offal make good pork, and better than pigs fed on sheep offal. However this may be, we can say with certainty that *human instinct* (which is sometimes better than reason) *recoils from such food.*"

[We are informed, upon inquiry, that very little if any of the slaughter-house pork finds its way into Quincy Market. We are told that it is mostly sold into the "packing houses," where it is salted and sold in bulk for the sustenance in part, we suppose, of "poor Jack." The spare-ribs are perhaps purchased by the lower class of provision stores.

We do not understand Dr. Derby to object to pork fed on grain. For ourselves, we are a follower of the late Dr. James Jackson in approving of it. In one of his "Letters to a Young Physician," Dr. Jacksons says:—"I know that it [pork] is contemned, and even thought injurious by many persons who are not Jews. To some stomachs it certainly is offensive, even though it be of the best quality. But to many persons our New England corn-fed pork is easy of digestion, highly agreeable, and, as the phrase is, very *wholesome*. That is the term which in my early days many delicate persons employed when they meant that the article was good for the bowels." —Editor.]

"We know that the fat of the carrion beast is soft, and prone to decomposition unless his diet is changed to grain before killing. If the question is asked of any butcher in the market whether the pork he offers for sale is from a slaughter-house pen, the reply will be such as to satisfy the inquirer that such origin is not considered a recommendation.

"The second objection to slaughter-house piggeries is of a more positive character. If anything is settled as to the causes of disease it is the influence of decomposing organic matter in giving rise to diarrhœal affections, and typhoid fever, in depressing the vitality of children, thus rendering them less capable of resisting disease in every form, and in making all the epidemics more active and virulent. The slaughter-house pig-pens are filled with putrid animal matter, with rotting blood mingled with excrement, and are *therefore a source of danger to public health.*

"In making this statement we do not overlook the fact that Brighton, where most of the slaughtering is done and in the manner described, has not been, up to the present time, an unhealthy town. This apparent contradiction of a general law whose truth has been proved all over the civilized world, is capable, we think, of explanation.

"The town of Brighton is three miles long and a mile and a quarter wide, and contained in 1865 less than 4,000 people. Its natural sanitary advantages are very great. Its soil is for the most part dry, its surface is broken by hills of considerable height, and it is drained on its whole northern and eastern side by Charles River. The occupations of its people oblige them to *work in the open air.* They are butchers, farmers and market-gardeners. There are no shoe factories, or other industrial establishments requiring numbers of persons of either sex to work in doors.

"There is also general thrift, industry and prosperity, which, in themselves, always tend to make a people healthy. Scattered over the whole territory are about fifty slaughter-houses. It is evident, on looking at these establishments with reference to the position of the dwellings, that no one will live near a slaughter-house if he can help it.

"Each slaughter-house, with its associated pig-pen, is isolated, and exposed to the freest possible ventilation, both without and within. The foul air to which these places give origin is not breathed until it has freely mingled with air which is pure.

The absence of excessive mortality in Brighton up to the present time, is due, in our opinion:—1st, to the almost exclusive *out of door occupations of its people*; 2d, to its healthful site; 3d, to the separation and abundant ventilation of each of its many nuisances; and 4th, to the possession, by its people generally, of the means of procuring all the comforts of life.

"The happy exemption from serious disease to which we have referred *cannot continue* if ventilation is obstructed by a dense population. As soon as people are compelled to live in large numbers in the vicinity of rotting organic matter it cannot fail to produce its legitimate and well-recognized effect.

"The future character of this beautiful township, possessing rare advantages for the establishment of healthful and pleasant homes for a hundred thousand people, must depend upon the manner in which its chief business is conducted. Tainted air will finally attract a tainted population, while a reform of its slaughter-houses, which is both practicable and safe, will not only insure

the *future* health of Brighton, but greatly increase the value of its territory.

"*Fat-melting and Bone-boiling.*—The fat and tallow and heads from the various slaughter-houses around Boston are carried to the melting and bone-boiling establishments. They also receive a large portion of the feet of the animals, and the fat, and odds and ends from provision stores, also very lean and unsalable meat from the markets. Some of them receive dead animals. These various portions are separated according to their fat-rendering value.

This material is carried about the neighborhood of Boston, and is finally delivered, in Boston proper, in Cambridge, Charlestown, Brighton, Roxbury and other towns. Here it is boiled in open vats, and emits a most offensive odor. Sometimes an attempt is made to carry off the vapors by a high chimney, but even in this case the lids of the vats are of wood, and the foul smell freely escapes.

"The effect of boiling is to drive off the watery portions, leaving in the vats tallow, lard, oil, or grease, according to the materials employed; also bones, and the scrap or "greaves."

The bones are shipped to New York, or sent to East Boston to be ground and used, for the most part, as fertilizers. The scrap is generally pressed into cakes to be used for feeding hogs or poultry, and sometimes is used as manure. At one of the largest of these establishments the scrap, dipped out of the vats, is spread in layers like fish-flakes and dried by a furnace. The odor in the building where this drying process is carried on is insupportable, and the general stench from the premises is such as to be perceptible several hundred yards from the entrance. And this in a part of Boston filled with a crowded population.

"*Disposition made of Dead Horses, Cattle, Sheep, Pigs, Dogs and Condemned Meat.*—In a population as large as that of Boston and its immediate vicinity, the amount of dead material of the description above referred to is very great, and it becomes every year more important that it should be disposed of in an orderly, cleanly and healthful manner. Dead horses from the streets and stables of Boston proper, are now carried through South Boston and shipped from the "Point" to Spectacle Island. Fifteen to twenty a week are here boiled in open vats, emitting a horrible stench, which is carried by the wind over the inner harbor and adjacent islands. Pigs have been kept at this place in large numbers, but in a recent visit we found only two. The place is disgusting, and filthy in the extreme.

"Dead cattle and sheep and pigs, from the railroad trains, are bought by the various bone-boiling establishments in the neighborhood of Boston and 'rendered' in the manner described. Some of them also receive horses. Many of the animals are putrid before a bargain is made for their removal. Dogs and cats for the most part get into the docks, or are thrown into the ash carts and go to make up the filling of new land.

"*The Remedies* for the evils to which we have called attention, may be thus expressed in their simplest form:—

"1st. The prevention of putrefaction.

"2d. The conversion of the offensive vapors, resulting from boiling, into inodorous and harmless gases.

"Everything connected with the business of slaughtering can, in one of these two ways, be disposed of, except the manure made by the animals, which need be no more offensive than in a well-kept stable.

"To accomplish all this it is necessary—

"1st. To give up the practice of feeding the offal to hogs.

"2d. To build abattoirs and melting houses within the same enclosure.

"Not a single step can be made in the improvement of existing modes of slaughtering without giving up the practice of feeding the offal to hogs; with them, reform is hopeless.

"It is not necessary to go to either Paris or London to see an abattoir on a very extensive plan. The 'Butchers' Hide and Melting Association' of New York have one in successful operation at the foot of 44th and 45th Streets, East River. * * * *

"By either of these processes, the condensation of the vapors by cold water, or the destruction by fire, every tallow-rendering and bone-boiling establishment can be made perfectly inoffensive.

"*The value of Blood.*—The reform of any social evil may be greatly hastened if it can be shown that it does not involve pecuniary loss. Whoever attempts to reform our mode of slaughtering animals must be prepared to meet the universal statement among the butchers that hogs fed upon blood and offal are a source of profit. *We cannot deny it*, while at the same time asserting that, as a source of danger to public health, the practice ought to be given up. But we also believe that *the loss of the value of blood* involved in the present sys-

tem is enough to nearly, and perhaps quite, compensate for the gain in hog-keeping."
* * * * * * * *

THE MUSCULAR LABOR OF THE UTERUS IN PARTURITION.—The Obstetrical Society of Dublin were the auditors, on Saturday evening last, of a most interesting and masterly communication on this subject from Professor Haughton, F.R.S., of which, not only were the details of the scientific investigation of the greatest interest, but the results obtained were of the highest practical value. The investigations were undertaken by Professor Haughton as part of the inquiry which he is about giving to the public in a work on Animal Mechanics. He applied himself to the testing of the relative mechanical power of the involuntary or uterine and voluntary or abdominal muscular system engaged in parturition; and by a variety of experiments and mathematical calculations, by ascertaining the weight of the muscles engaged, he has arrived at results which will, doubtless, astonish our readers.

He showed, with conclusiveness, that the expulsive force of the uterus, employed in dilating the os in the first stage of labor, amounted to 3·4 lbs. on the square inch; and he compared this result with the conclusion arrived at by Dr. Matthews Duncan, that the membranes required a force of 3·1 lbs. on the square inch for their rupture. Thus, he pointed out that the expulsive power of the uterus was just capable of rupturing the membranes and no more, and he illustrated by this comparison the beautiful and wonderful economy of labor evidenced in the human system. He found, however, that the expulsive force capable of being voluntarily exerted by the woman was enormously greater than that of the uterus, and was equivalent to 38·6 lbs. on the square inch, and he believed that it was by this force in the greatest measure that the expulsion of the fœtus was effected. He reduced his investigation to the following figures:—

Involuntary, or uterine force,	3·4 lbs. on square inch.
Voluntary, or abdominal force,	38·6 " "
Maximum expulsive power,	42 " "

Which, calculating the fœtal head to have a diameter of 4½ inches, would represent the enormous force of 593, or about a quarter of a ton, which *might* be engaged in parturition. He, of course, was aware that only a small proportion of this power was usually exerted.

The obvious practical bearing of this investigation on the use of chloroform in labor was pointed out by Professor Haughton; and he suggested that while it might be found useful in the very earliest part of each expulsive effort, from its temporary power of stimulating muscular action, its use afterwards was obviously injudicious, inasmuch as it paralyzed the voluntary power, on which the process of parturition so much depended. * * * —*Medical Press and Circular.*

M. PEAN recently related to the Academy of Medicine at Paris that out of ten cases of ovariotomy performed by him, seven had lived. This is a great advance in French surgery.

The *Gazette des Hôpitaux* give the report of a case in which chloral was exhibited to the extent of producing perfect anæsthesia, under which amputation of the leg was performed by M. Noir. After the operation it was long before the patient recovered his sensibility, and the symptoms for seven hours were most alarming: coma, succeeded by delirium, vomiting and prostration.—*Medical Press and Circular.*

DEATHS FROM CHLOROFORM.

At the Lincoln County Hospital, a boy aged 14, with necrosis of the tibia, who had taken chloroform safely on a former occasion. "The boy had become insensible and the operation had commenced, when he was seized with vomiting; after vomiting one or two minutes he became livid, his breathing ceased, and his pulse was imperceptible. In spite of the usual remedies death followed. The *post-mortem* examination did not reveal any peculiarity excepting enlargement of the liver."—*British Medical Journal*, Jan. 8, 1870.

M. L. Labbe communicated to the Imperial Society of Surgery, March 31, 1869, a case of this. The subject of it was a man aged 42, who had fractured both bones of his left leg January 19, 1869. Six days afterwards tetanic symptoms came on. To quiet the spasm, the next day chloroform was given, but after a few inspirations the pulse ceased, and the patient presented all the apparent signs of death. Artificial respiration was resorted to, the tongue drawn out, and after a short time the circulation and respiration were re-established. The patient was then put to bed, apparently in a satisfactory condition. But a moment afterwards the respiration suddenly ceased, and despite all the usual efforts, life became extinct.—*Journal Hebdomadaire.*

Medical Miscellany.

If the Journal called *Good Health* is to treat its readers to such articles as one of those in the February number it will, in our humble opinion, hardly attain its "aim—the improvement in human health—the lengthening out of human life." No amount of eminent names, and able papers within its covers could atone for such stuff. We are tempted to regret the qualified commendation we once gave of that Journal.

We show our appreciation of our Dublin cotemporary—*The Medical Press and Circular*—in expressing our regret that it did not credit its extract from Dr. Clarke's address to this Journal. The extract related to the medical instruction of females at the same time and place with males.

Relapsing Fever is said to have appeared in New York. Take down your Watson and you will find the story of this disease tersely told in Lecture Lxxxv.

Turpentine as an Antidote to Poisoning by Phosphorus.—M. Curié has performed a very comprehensive series of experiments on this subject, which go far to disprove the theories announced some time since, and to show that the recoveries in certain cases were not due to the influence of turpentine as an antidote, when patients who had taken phosphorus, and were seriously imperilled by it, were saved, as supposed, by the administration of turpentine.

M. Curié selected both rabbits and dogs. The rabbits were given phosphorus dissolved in oil, and immediately afterwards the supposed antidote of turpentine; but all died in from six to thirty-six hours. Dogs, also, were experimented on with like result, and in one specially an injection containing phosphorus and turpentine together was used, and a sponge introduced to plug the orifice; the dog did not die on that occasion, but, as believed, from an insufficient quantity of the poison. On a repetition of the experiment the animal died. In another case a dog was given phosphorus; no remedy was used, and the animal finally recovered.

M. Curié therefore believes that it is fallacious to suppose that turpentine is an antidote to phosphorus poisoning, but simply acts by causing vomiting.—*Dublin Med. Press and Circular.*

Treatment of Hæmorrhoids.—M. Richet has published, in *L'Union Médicale*, a clinical lecture "On Hæmorrhoids," in which he advises the use of forceps, brought to white heat, to cauterize piles in several sections. The Professor gives a history of the various modes of operating which have been proposed, but omits to mention Houston's nitric acid plan, and the manner of seizing hæmorrhoidal tumors with a clamp, cutting them off, and arresting the hæmorrhage either with nitric acid or the actual cautery—an operation successfully practised by many British surgeons.—*London Lancet.*

With regard to the intermingling of the sexes in clinical teaching the *London Medical Times and Gazette* says:—"We are glad that the medical men of Pennsylvania have come forward to protect at least the modesty of their own sex. We hope that their example will not be lost on the other, and we commend the whole position to the consideration of the Universities of Edinburgh and Paris."

To Correspondents.—Communications accepted:—Reduction of Dislocations—Case of Chronic Gastric Ulcer—Medical Testimony of Experts, Report on—Muscular Excision as an Aid to Diagnosis.

Notice.—Part LX. of Braithwaite's Retrospect was mailed from this office on the 8th inst. to members of the Massachusetts Medical Society who have paid their assessments for the year 1869-70. Members who have paid and do not find the books at their post-offices, are requested to forward their vouchers to the Librarian, care of D. Clapp & Son, Medical and Surgical Journal Office, 334 Washington St., Boston.

Books and Pamphlets Received.—A Manual of Clinical Medicine and Physical Diagnosis. By Thomas Hawkes Tanner, M.D., F.L.S. Philadelphia: H. C. Lea. 12mo. Pp. 366.—Dr. Water's Doctrines of Life. Reply to London Lancet, and Closing Remarks. By J. H. Waters, M.D., St. Louis, Mo.—Medical Department of the Library of the Long Island Historical Society. An Account of its Formation, with a Catalogue of its Books.

Died,—In Lexington, Ky., Jan. 20, Benjamin W. Dudley, M.D., aged 85—"long the leading surgeon of the Valley of the Mississippi, and a teacher of surgery of wide fame."

Deaths in sixteen Cities and Towns of Massachusetts for the week ending Feb. 5, 1870.

Cities and towns.	Number of deaths in each place.	Prevalent Diseases		
		Consumption.	Pneumonia.	Typhoid Fever.
Boston	96	21	6	2
Charlestown	9	2	2	0
Worcester	21	3	0	3
Lowell	18	3	0	2
Milford	4	0	0	0
Chelsea	7	1	1	0
Cambridge	11	0	0	1
Salem	12	4	1	0
Lawrence	8	1	1	1
Pittsfield	1	0	0	0
Fitchburg	4	0	0	0
Taunton	11	3	1	0
Newburyport	7	4	1	0
Somerville	3	0	1	0
Fall River	9	3	1	0
Haverhill	2	1	0	0
	223	46	15	9

Fourteen of the above places report no deaths from scarlet fever; Boston reports nine and Taunton two.

George Derby, M.D.,
Secretary of State Board of Health.

Deaths in Boston for the week ending February 5, 96. Males, 61—Females, 35.—Abscess, 1—accident, 1—apoplexy, 1—disease of the brain, 2—inflammation of the brain, 1—bronchitis, 1—burns, 1—cancer, 3—cancrum oris, 1—cholera infantum, 1—consumption, 21—convulsions, 4—croup, 3—cyanosis, 1—debility, 1—diphtheria, 1—dropsy, 3—dropsy of the brain, 1—scarlet fever, 9—typhoid fever, 2—gastritis, 1—disease of the heart, 1—infantile disease, 4—disease of the kidneys, 1—congestion of the lungs, 2—inflammation of the lungs, 6—marasmus, 3—old age, 4—paralysis, 2—premature birth, 3—puerperal disease, 3—rheumatism, 1—tumor, 1—unknown, 4—whooping cough, 1.

Under 5 years of age, 39—between 5 and 20 years, 8—between 20 and 40 years, 22—between 40 and 60 years, 15—above 60 years, 12. Born in the United States, 67—Ireland, 21—other places, 8.